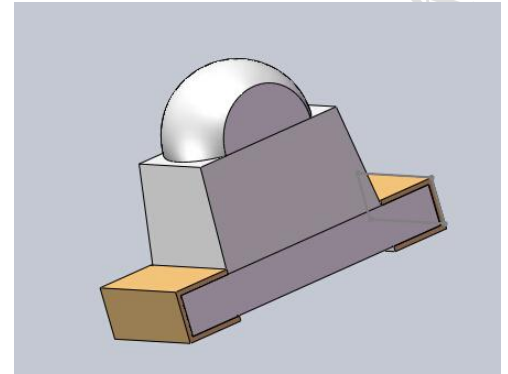


## Infrared Light Emitting Diode

### 1. GENERAL DESCRIPTION

GTR1-IRN01AC-TT/TR is a high power Infrared Emitting Diode in AlGaAs/Si technology & wavelength of 940nm. Molded in clear epoxy (with lens), untinted PCB based SMD package.



### 2. FEATURES

- Narrow beam angle.
- Good linearity
- High output power
- Capable of pulse operation.
- Floor life: 168 hours, MSL 3, acc. J-STD-020

### 3. APPLICATIONS

- Emitter for remote control.
- IR touch panels.
- Photo-interrupters
- Optical switch

### 4. ABSOLUTE MAXIMUM RATINGS at Ta = 25°C

PARAMETER	SYMBOL	MAXIMUM RATING	UNIT
Power Dissipation	$P_M$	150	mW
Forward Pulse Current*1	$I_{FPM}$	1.0	A
Forward Current	$I_{FM}$	100	mA
Reverse Voltage	$V_R$	5	V
Operating Temperature Range	$T_{aop}$	-25~+85	°C
Storage Temperature Range	$T_{stg}$	-40 ~+100	°C
ReflowSolderingTemperature(10Sec.)	$T_{sld}$	250	°C
HandSolderingTemperature(3Sec.)	$T_{sld}$	300	°C
*1:PulseWidth $\leq 100 \mu s$ , Duty $\leq 1\%$ .			

**5. ELECTRICAL OPTICAL CHARACTERISTICS** at Ta = 25°C

PARAMETER	SYMBOL	MIN	TYP	MAX	UNIT	TEST CONDITION
Radiant Intensity	Ee	10	13	18	mW/sr	I <sub>F</sub> = 20mA
		--	65	--	mW/sr	I <sub>F</sub> = 100mA Pulse Width ≤ 100 μs, Duty ≤ 1%
Peak Emission Wavelength	λ <sub>peak</sub>	--	940	--	nm	I <sub>F</sub> = 20mA
Spectral Line Half-Width	Δλ	--	45	--	nm	I <sub>F</sub> = 20mA
Forward Voltage	V <sub>F</sub>	--	1.33	1.50	V	I <sub>F</sub> = 20mA
Reverse Current	I <sub>R</sub>	--	--	10	μA	V <sub>R</sub> = 5V
Angle of half intensity	2θ <sub>1/2</sub>	--	30	--	Deg	

**6. TYPICAL CHARACTERISTICS** (Ta = 25°C Unless Otherwise Noted)

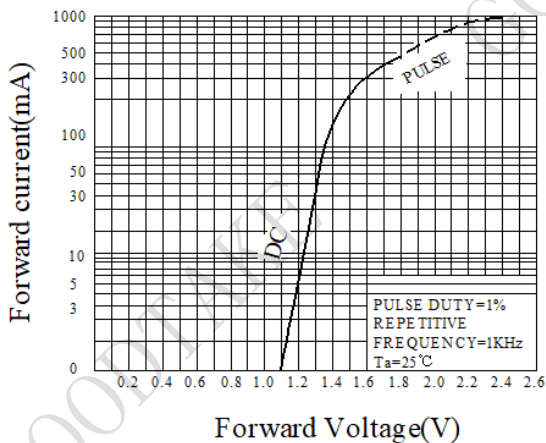


Fig.1 Forward Current Vs Forward Voltage

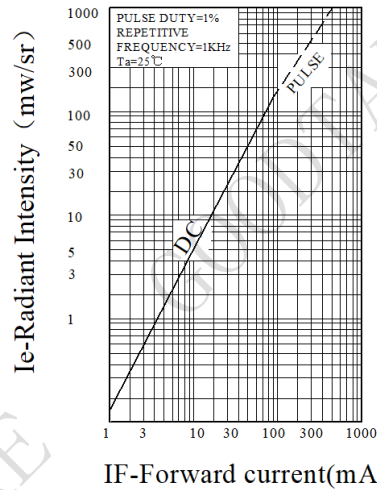


Fig.2 Forward Current Vs Radiant Intensity

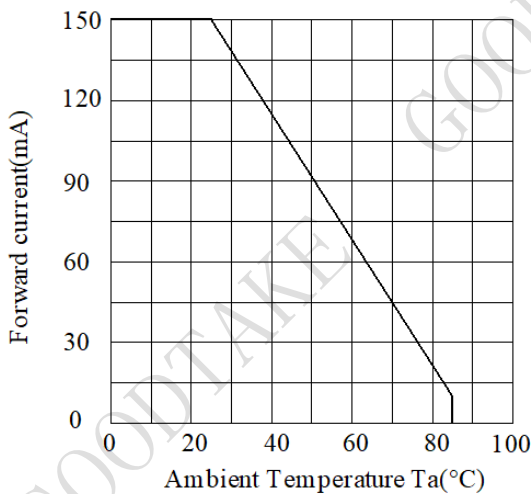


Fig.3 Forward Current Vs Ambient Temperature

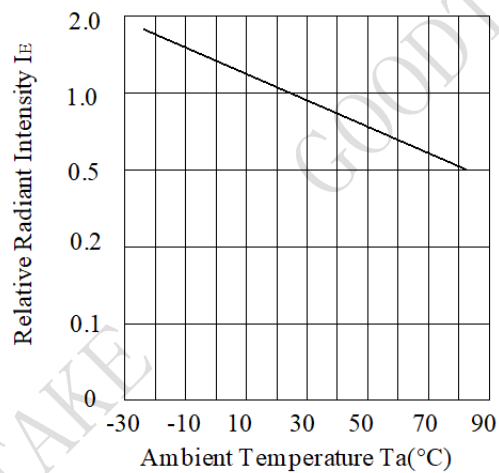


Fig.4 Relative Radiant Intensity Vs Ambient Temperature

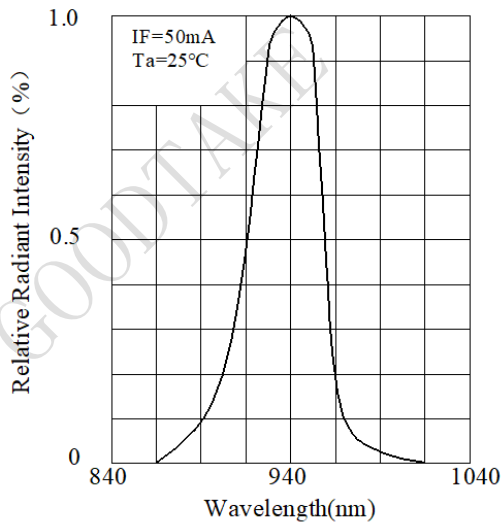


Fig.5 Relative Radiant Intensity Vs Wavelength

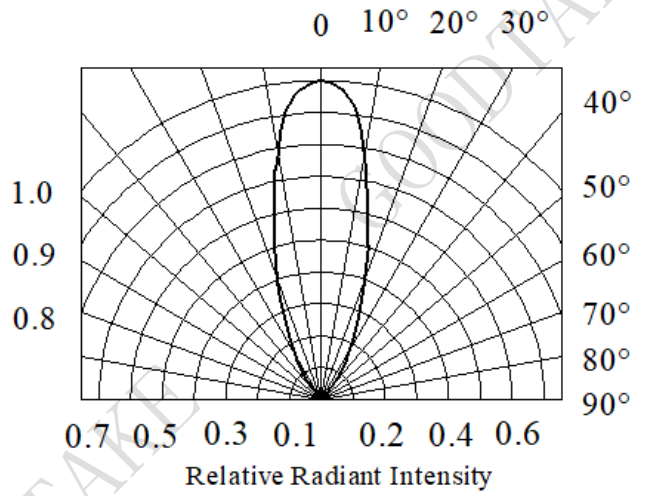
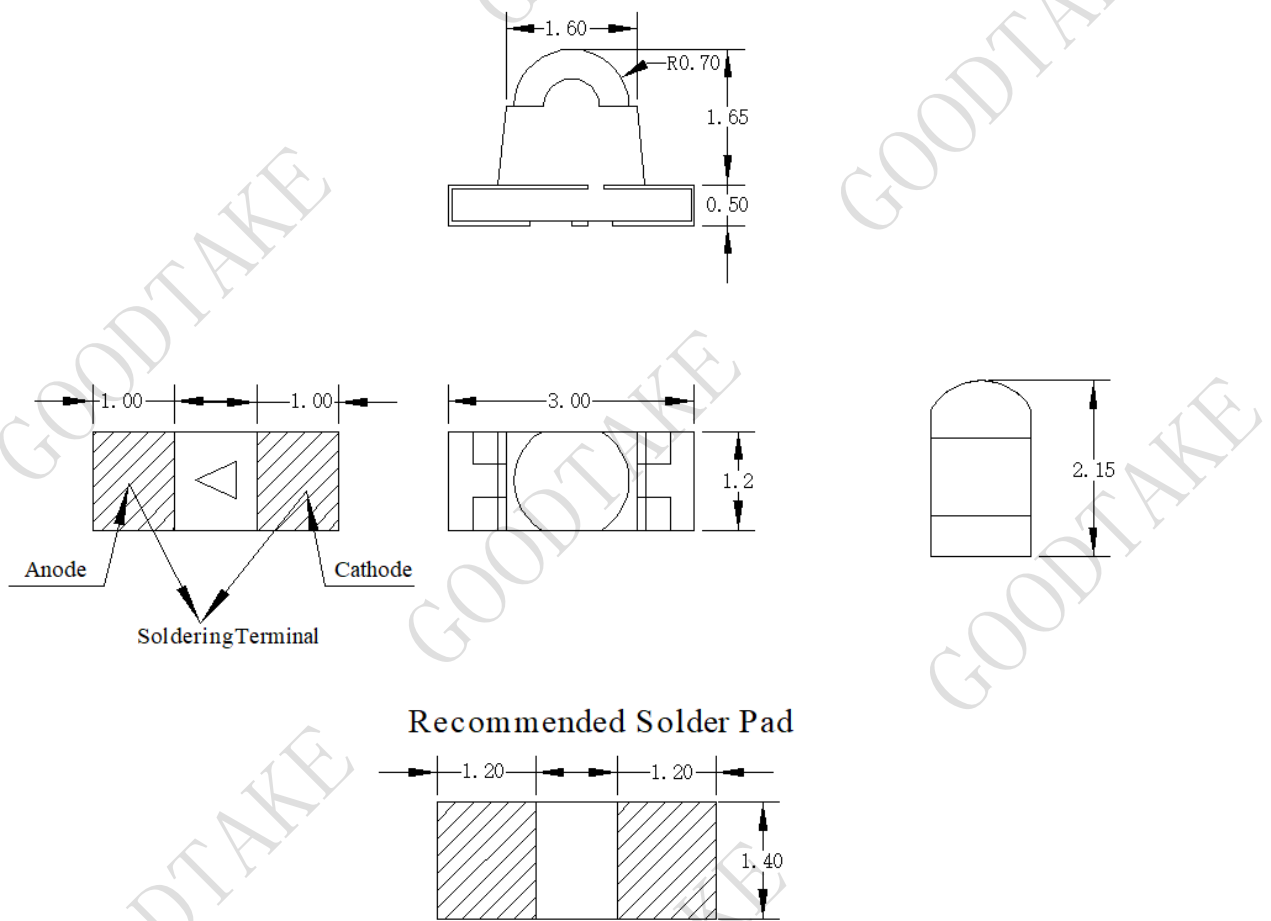


Fig.6 Angle Vs Radiant Intensity

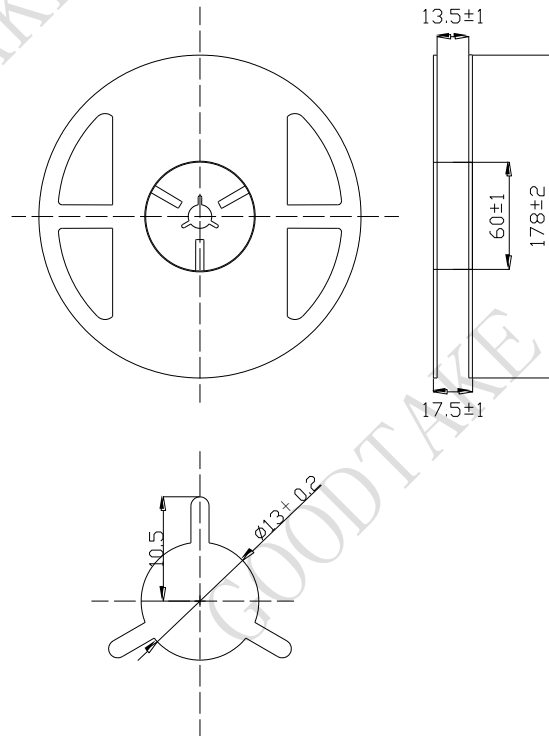
**7. PACKAGE DIMENSIONS**



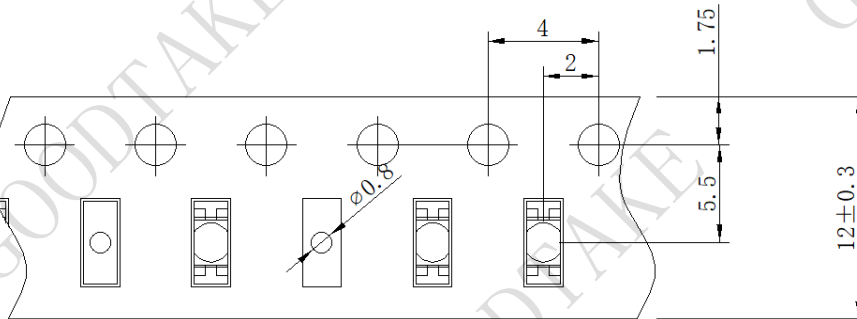
1. All dimensions are in millimeters
2. Tolerance is  $\pm 0.15$  unless otherwise noted

8. PACKAGE DIMENSIONS

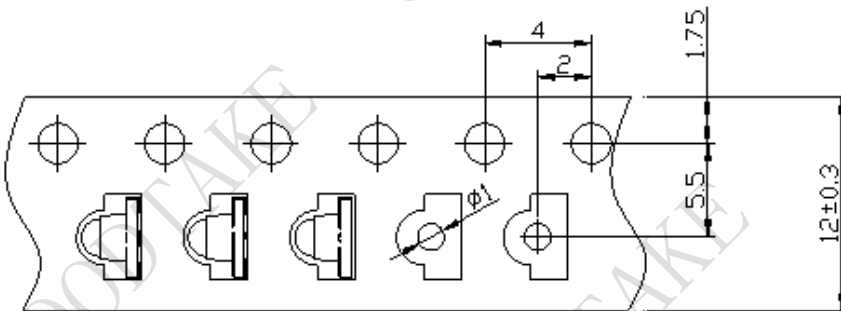
(1) Shape and dimensions of reels: unit in mm



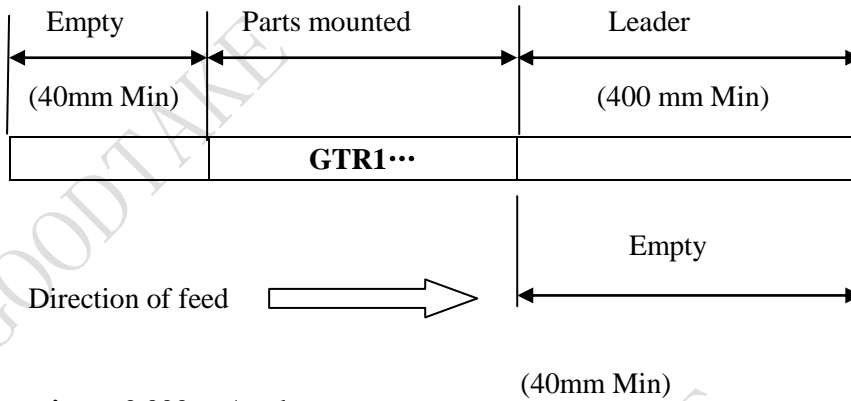
(2) Dimensions of TT tape:



(3) Dimensions of TR tape:



**(4) Configuration of tape**



**(5) Quantity:** 2,000pcs/ reel

**9.NOTES:**

**Antistatic dry packing**

Opto devices in SMD package may be sensitive to moisture. Devices are taped & reeled, sealed in antistatic bag with silica gel desiccants.

Do not open the sealed moisture-proof bag before ready to use. If sealing is void, baking treatment may be required.

**Storage**

**Shelf life** – Devices should be stored in its original packing, in a controlled environment of temperature less than 40 °C and relative humidity below 90%.

Suggested shelf life is 12 months in its original packing.

**Floor life** – MSL3. After opening of the sealed package, the reeled devices should be consumed within 168 hours, in a controlled environment condition of  $T_{amb} < 30\text{ °C}$ ,  $RH = < 60\%$ .

Remaining unused parts should be stored in Dry Box chamber.

**Drying (Baking Process)**

If original packing is voided (such as faded silica gel or exceeded storage time), baking treatment should be performed with the following conditions:-  $T_{storage} = 40 \pm 5\text{ °C}$ ,  $RH < 5\%$ , time = 192 hours.